

MUSCULOSKELETAL DISORDERS in OPTOMETRISTS and LEVEL OF RISK ASSOCIATED with OPTOMETRIC TECHNIQUES

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Purpose

- Health care practitioners report musculoskeletal disorders (MSDs), but few data exist in optometry
- What makes the optometric techniques particular and risky?

Study divided in two parts

1. Questionnaire
2. Postural analysis

QUESTIONNAIRE

GOALS

Principal Goals

- **Prevalence** of Quebec optometrists having experienced **MSD+** during the past 5 years

Secondary Goals

- Identify most affected **parts of the body** and associated risk factors

METHODS

Instrument

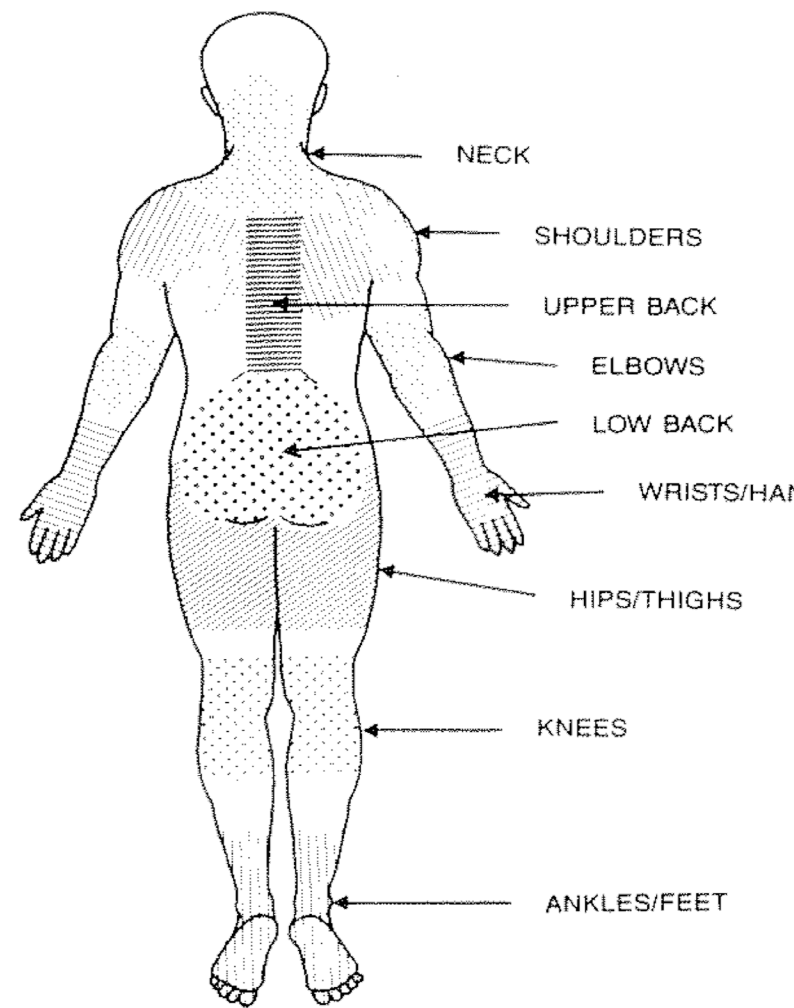
- Online questionnaire "Standardized Nordic questionnaire for analysis of musculoskeletal symptoms" modified for our purpose

Subjects

- Active members of the OOO (*Ordre des optométristes du Québec*: Québec's regulatory board)

Recruitment

- By email and through the AOO (*Association des optométristes du Québec*) Facebook page



MSD DEFINITION

MSD+ = 4 positive responses to the 6 following elements, for any body part

1. Did your pain eventually lead to you having to change jobs or change work field?
2. For what length of time, in total, did you experience problems during the last 5 years?
3. Did your pain lead to a reduction of your activities during the last 5 years?
4. Activities related to your career
5. Hobbies
6. For what total length of time did your problems prevent you from normally doing your job (at home as well as at work)?
7. During the last 5 years, did you ever consult a doctor, a physiotherapist, a chiropractor or any other health professional because of your pain?

RESULTS

Baseline characteristics of participating optometrists - BY MSP

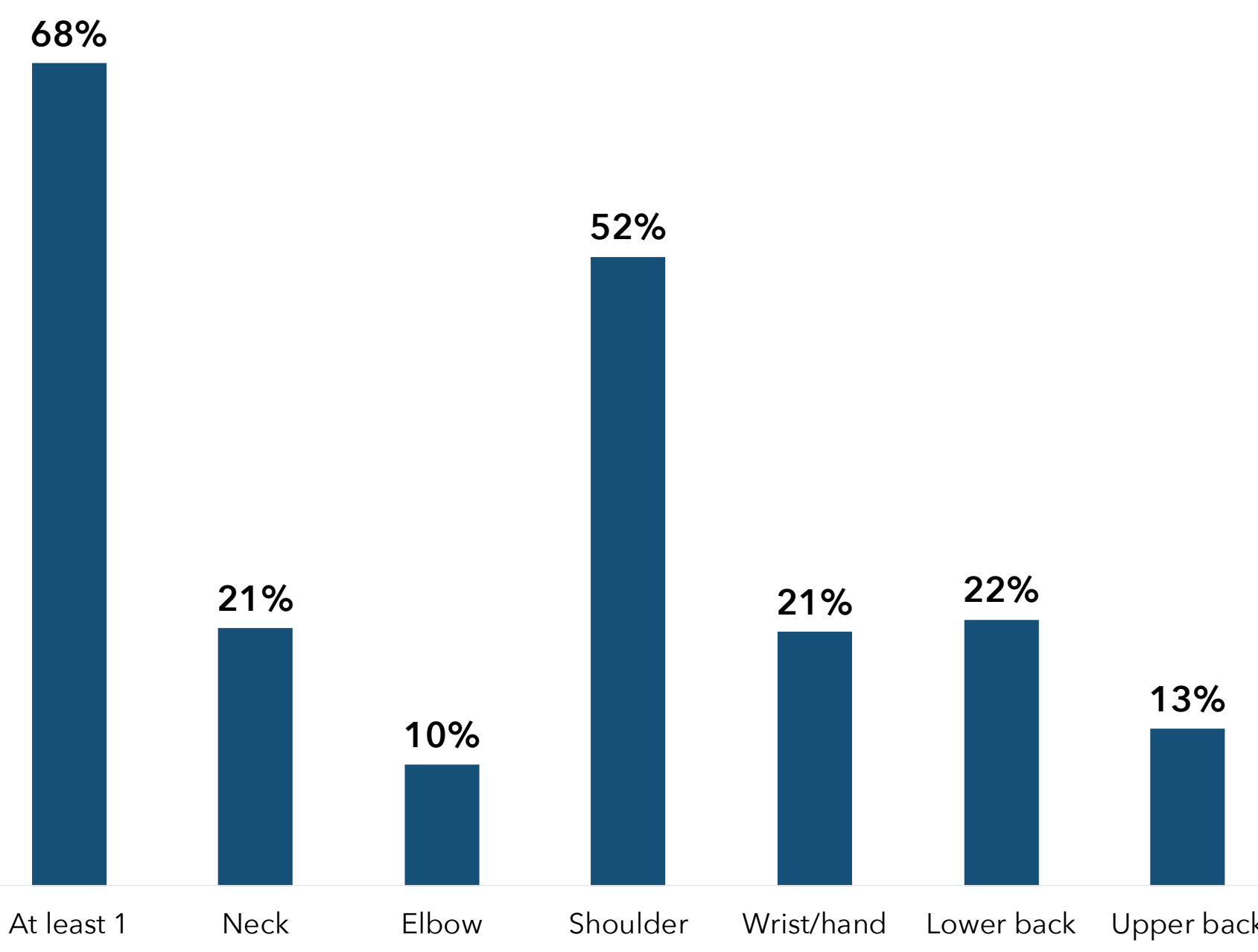
- Participation rate **19%**
- 83% of respondents were women

Prevalence of MSD+ = 68% (n = 191)

		MSP+ (n = 191)	MSP- (n = 91)	p*
Age (mean, SD)		44.43 (12.9)	41.84 (12.5)	0.11
Sex (n, %)	Male	24 (12.6)	22 (24.2)	0.01*
	Female	167 (87.4)	69 (75.8)	
BMI (mean, SD)		24.68 (4.8)	23.37 (3.6)	0.01*
Physically active (n, %)	Non active	70 (36.6)	31 (34.1)	0.67
	Active	121 (63.4)	60 (65.9)	
Years of practice (mean, SD)		20.27 (13.3)	17.49 (12.9)	0.10
Hours of patient care, per week (mean, SD)		30.64 (6.6)	30.28 (5.7)	0.66
Dominant hand (n, %)	Right	176 (92.1)	81 (89.0)	0.39
	Left	10 (11)	15 (7.9)	

* Student t-test for age, BMI, years of practice, hours of patient care.
Welch T-test for or Chi-square test for sex, physical activity, dominant hand

% of MSD+, by body part



Factors associated with developing a MSD+

(Logistic regression R² = 0.066)



PROTECTIVE FACTORS

Male

4.35x less risks of reporting MSD+ (OR 0.23, P < 0.001)



RISK FACTORS

Number of years of practice

MSD+ risk increase of 4%/year of practice (OR 1.01, P = 0.001)

BMI

MSD+ risk increase of 8% for every BMI unit increase (OR= 1.08, P=0.036)



NO EFFECT

Hand dominance

Physically active

Number of hours spent with patients per week

CONCLUSION

- **First glimpse of the issue:**
 - High prevalence of MSD+ among Quebec optometrists
 - Important postural risks associated with BIO and refraction and other techniques
- **More prevention and increased awareness is needed**
- **Possible association between doing an eye exam and the occurrence of MSD+**

POSTURAL ANALYSIS

GOALS

Principal Goals

- **Level of risk** of MSD+ during most **common and repetitive optometric techniques**

Secondary Goals

- Identify the common errors (postures with the highest risk of MSD+) within the studied population

METHODS

Instrument

- "Rapid entire body assessment" (REBA)

Subjects

- Students from the class of 2019 from the University of Montreal school of optometry

4 techniques

- Refraction
- Biomicroscopy
- Fundus biomicroscopy (FB)
- BIO (upper retina)

REBA Scoring

1 = Negligible Risk

2-3 = Low Risk. Change may be needed

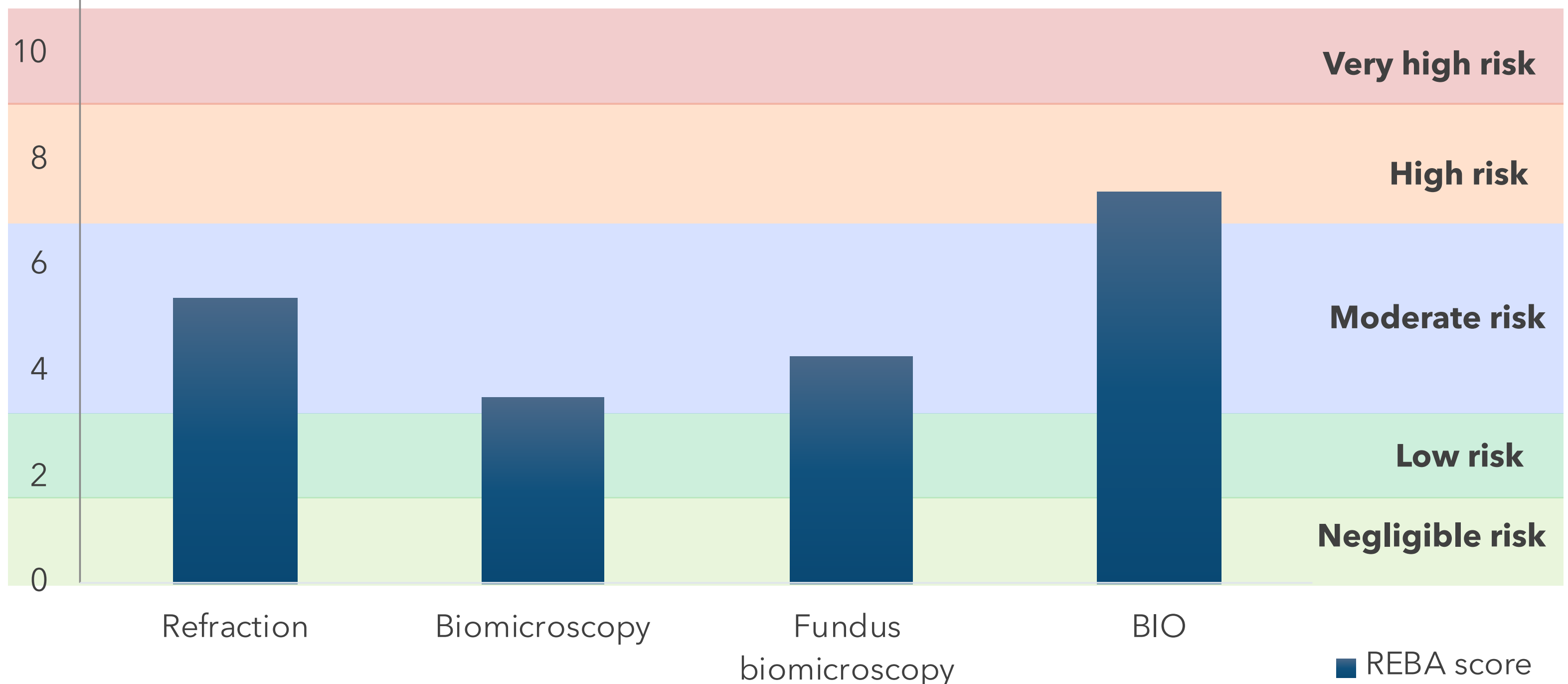
4-7 = Medium Risk. Further Investigate. Change Soon

8-10 = High Risk. Investigate and Implement Change

11+ = Very High Risk. Implement Change

RESULTS

REBA score for common optometric techniques



Risk factors associated with optometry techniques

